

What is claimed is:

- Sub A1 ✓
1. A process for metal deposition, said process comprising providing an aqueous solution comprising a metal activator, contacting a part to be plated with the aqueous solution of the metal activator for a time sufficient for the metal activator to adsorb onto the part, contacting the part with a reducing agent capable of reducing the metal activator to a lower oxidation state, and metal plating the part by contact with a plating solution.
 2. A process for electroless metal deposition of an organic resin part, comprising etching the part with reactive hydroxyl species while catalyzing the part with an electroless metal plating catalyst, and metal plating the part by contacting the part with an electroless metal plating solution.
 3. The process of claim 2 the reactive hydroxyl species are generated by reaction with a metal activator.
 4. A process of claim 1 or 3 wherein metal activator is silver, cobalt, ruthenium, cerium, iron, manganese, nickel, rhodium, or vanadium.
 - Sub A2 ✓
 5. A process of claim 1 or 3 wherein the metal activator is silver.
 6. A process of claim 1 or 3 wherein the metal activator is cobalt.
 7. A process of any one of claims 1 through 6 where the part to be plated is an organic plastic, preferably acrylonitrile butadiene styrene, polyamide, epoxy, polycarbonate, polyetherimide, or blends thereof.
 8. A process of any one of claims 1 through 7 wherein the part to be plated is a printed circuit board substrate or an EMI substrate.

9. A process of any one of claims 1 through claim 8 where the metal activator is present in a concentration of from about 0.01 to 2.0 moles per liter of solution, preferably in a concentration of from about 0.1 to 1 mole per liter of solution.

10. A process of claim 1 where the reducing agent is selected from the group consisting of a phosphite, a hydride, a borane, a borohydride, formaldehyde or a thionite.

11. A process of claim 1 where the plating solution is an electroless copper plating solution.

12. A process of any one of claims 1 or 3 through 11 wherein the metal activator is oxidized electrochemically and the solution containing the oxidized metal substrate is exposed to the part, and the metal activator is reduced.

13. The process of any of the preceding claims wherein a plating catalyst such as Pd/tin, Pd, or platinum separate from the metal activator is not employed, and/or chromic acid or permanganate treatment of the part is not employed.

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Sub A3

Add A4